

New Patent Claims 1 - 12

1. Method for producing a carbon element having a honeycomb-shaped structure, using a resin-impregnated base body with a honeycomb-shaped structure that is made from paper or fleece, which is first pyrolyzed and then stabilized and/or compressed, characterized in that the stabilized honeycomb-shaped element is coated with a carbon-containing solution and then again pyrolyzed.
2. Method pursuant to claim 1, characterized in that a honeycomb element made from resin-impregnated Aramid paper is used as the base body.
3. Method pursuant to claim 1, characterized in that the pyrolyzed base body is stabilized and/or compressed by means of material precipitation from the gaseous phase.
4. Method pursuant to claim 3, characterized in that the pyrolyzed base body is stabilized and/or compressed in particular by means of CVI and/or CVD precipitation with C, SiC, B₄C and/or Si.
5. Method pursuant to claim 1, characterized in that an SiC or PyC layer is formed on the pyrolyzed base body.
6. Method pursuant to claim 1, characterized in that the pyrolyzed and stabilized or compressed base body is coated with a ceramic slip, which is converted into ceramics such as SiC.
7. Method pursuant to claim 1, characterized in that the base body having the honeycomb structure is carbonized at a temperature T_1 wherein $850^{\circ}\text{C} \leq T_1 \leq 1100^{\circ}\text{C}$, especially $900^{\circ}\text{C} \leq T_1 \leq 1000^{\circ}\text{C}$.
8. Method pursuant to claim 1 or 8, characterized in that the base body is graphitized at a temperature T_2 wherein $1700^{\circ}\text{C} \leq T_2 \leq 3100^{\circ}\text{C}$, especially $1800^{\circ}\text{C} \leq T_2 \leq 2450^{\circ}\text{C}$.
9. Method pursuant to claim 1, characterized in that as the base body a body is used that comprises high temperature stable fibers such as carbon fibers or SiC fibers or pyrolyzable fibers with sufficient carbon residue such as phenolic resin fibers, Aramid fibers, flax, hemp or other cellulose fibers as the reinforcing material.

10. Method pursuant at least to one of the above claims, characterized in that the pyrolyzed and stabilized or compressed base body is subsequently subjected to further strengthening or finishing operations.
11. Method pursuant at least to one of the above claims, characterized in that the pyrolyzed and stabilized or compressed base body is siliconized.
12. Use of a commercially available honeycomb element made from Aramid paper, which is saturated with a resin, pyrolyzed and then stabilized and/or compressed, as a filter, catalyst or component that is to be planked for the aviation and aerospace industry.

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